

Chapter 7 Practice Test

To receive credit, you must show your work and explain your reasoning.

- 1) Use the properties of exponents to simplify each expression.

a. $3x^5 \cdot 2x^5 =$

b. $\frac{56x^9}{8x^2} =$

c. $\frac{14x^3}{2x} =$

d. $(3x)(-5x)(-5x) =$

e. $2(3x)^3 =$

f. $3 \cdot x^{-2} =$

g. $(3x)^{-1} =$

Name _____

- 2) A box of cereal costs \$4.50. Because of inflation, the price increases by 6% each year.

a) Write an equation to model the growth in the price of the cereal. Make sure to define any variables you used.

b) Use your equation to predict the price of the cereal three years from now.

c) Use your equation to predict when the price will exceed \$6.50

- 3) Write an equation for the relationship between x and y in each table.

X	Y
0	1000
1	700
2	490
3	343
4	
5	

X	Y
0	3
1	3.75
2	4.50
3	5.75
4	7.50
5	9

Name _____

- 4) Toward the end of the year, to make room for next year's models, a car dealer may decide to drop prices on this year's models. Imagine that a car that has a sticker price of \$20,000. The dealer lowers the price by 4% each week until the car sells.
- a) What would be the price if the car didn't sell after 8 weeks?

 - b) Theoretically, could the price of the car ever be zero? Explain.
- 5) A bus company raises the prices of its tickets by 3.4% per year. In 2000, the price of a ticket from Dallas to New Orleans was \$50.
- a) Write an equation to find the price of the ticket for any given year?
Define all your variables.

 - b) What would the price of the ticket be today?

 - c) How much would a ticket have cost in the year 1990?